## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| Applicant(s) | : | Mark Levine et al. |
| Serial No. | : | 10/699,997 |
| For | : | DURABLE HIGHLY CONDUCTIVE SYNTHETIC FABRIC CONSTRUCTION |
| Filing Date | : | November 3, 2003 |
| Examiner | : | Andrew T. Piziali |
| Group Art Unit | : | 1794 |
| Confirmation No. | : | 5362 |

745 Fifth Avenue
New York, NY 10151

January 8, 2010

## REPLY BRIEF OF APPELLANT

**MAIL STOP APPEAL BRIEF- PATENTS**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is a Reply Brief presented in response to the Examiner's Answer dated November 24, 2009. Please charge any additional fees required or otherwise occasioned by this paper or credit any overpayments to Deposit Account No. 50-0320.

## REAL PARTY IN INTEREST

The real party in interest is Albany International Corp., 1373 Broadway, Albany, New York 12204, to which Appellants have assigned all interest in, to and under this application, by virtue of an assignment recorded on March 8, 2004 at reel 015060,

frame 0418; reel 015060, frame 0428; reel 015060, frame 0430; of the assignment records of the Patent and Trademark Office.

## RELATED APPEALS AND INTERFERENCES

Upon information and belief, the undersigned attorney does not believe that there is any appeal or interference that will directly affect, be directly affected by or have a bearing on the Board's decision in the pending appeal.

## STATUS OF THE CLAIMS

The Application was filed with claims 1-38 on November 3, 2003 and assigned Application Serial No. 10/699,997.

In a first Office Action dated June 17, 2005, the Examiner required an election of a species under 35 U.S.C. §121.

The Examiner also rejected claims 12, 18 and 32 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner also rejected claims 1-4, 7-8, 11-16, 19-22, 27-28 and 31-36 under 35 U.S.C. §102(b) or in the alternative under 35 U.S.C. §103(a) over U.S. Patent No. 6,432,850 to Takagi.

Claims 9-10, 23, 29-30 and 38 were rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,432, 850 to Takagi as applied to 1-4, 7-8, 11-16, 19-22, 27-28 and 31-36, above and further in view of U.S. Patent No. 4,803,096 to Kuhn et al.

In response to this first Office Action, Appellants filed an Amendment on September 13, 2005 electing (pursuant to a teleconference) species 3, including claims 1-4, 7-24 and 27-38, amending claims 1, 12, 13, 15, 16, 21, 24, 32, 33, 35, 36, adding new claims 39 and 40, and arguing against the claim rejections.

The Examiner then issued a Final Office Action dated October 14, 2005 ("Final Office Action"), in which the Examiner withdrew the rejections under 35 U.S.C. §112 and maintained the remaining rejections in the first Office Action.

In response to this Final Office Action, Appellants filed a Request for Continued Examination with an Amendment on January 11, 2006. An Office Action was mailed March 30, 2006 maintaining the rejections in the Final Office Action.

In response to this first Office Action, Appellants filed an Amendment on June 30, 2006 amending claims 1, and 24 and arguing against the claim rejections.

Appellants held a teleconference with the Examiner, as documented in the Interview Summary dated July 10, 2006, in which claims 1, 15 and 16 were discussed.

The Examiner then issued a Final Office Action dated August 21, 2006, in which the Examiner withdrew the rejections of claims 15 and 35 and rejected claims 1-4, 7-8, 11-14, 16-17, 19-22, 24, 27-28, 31-34, 36-34, and 39-40 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,432,850 to Takagi in view of U.S. Patent No. 5,744,236 to Rohrbach et al. Claims 9-10, 23, 29-30 and 38 were rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,432, 850 to Takagi in view of U.S. Patent No. 5,744,236 to Rohrbach et al. as applied to 1-4, 7-8, 11-16, 19-22, 27-28 and 31-36, above and further in view of U.S. Patent No. 4,803,096 to Kuhn et al

Appellants held a teleconference with the Examiner, documented in an Interview Summary dated December 4, 2006, in which all claims were discussed.

In response to this Final Office Action, Appellants filed an Amendment on December 21, 2006 amending claims 1 and 24 and canceling claim 21 and arguing against the claim rejections.

The Examiner then issued an Advisory Action dated February 1, 2007 ("Advisory Action"), indicating that the December 21, 2006 response was not entered

since the amendment raised new issues that would require further consideration and/or search.

Appellants them filed a Request for Continued Examination on February 16, 2007 appealing the Final rejection.

An Office Action was mailed April 9, 2007 maintaining the rejections in the Final Office Action. Claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27, 28, 31-34, 36, 37, 39-40 were rejected over U.S. Patent No. 6,432, 850 to Takagi in view of U.S. Patent No. 5,744,236 to Rohrbach et al. and further in view of U.S. Patent No. 3,842,465 to Sillaots et al. ("Sillaots") under 35 U.S.C. §103(a). Claims 9-10, 23, 29-30 and 38 were rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,432, 850 to Takagi in view of U.S. Patent No. 5,744,236 to Rohrbach et al. and further in view of U.S. Patent No. 4,803,096 to Kuhn.

In response to this Office Action, Appellants filed a Response on July 9, 2007 arguing against the claim rejections.

The Examiner then issued a Final Office Action dated August 6, 2007 in which the Examiner maintained the remaining rejections in the first Office Action.

In response to this Final Office Action, Appellants filed a Response on October 25, 2007 providing links to websites and arguing against the claim rejections.

The Examiner then issued an Advisory Action dated November 1, 2007, indicating that the October 25, 2007 evidence was not entered.

In response to this Advisory Action, Appellants filed a Request for Continued Examination on December 6, 2007 appealing the Final rejection and requesting the previously submitted response be considered.

An Office Action was mailed January 10, 2008 maintaining the rejections in the Final Office Action.

In response to this Office Action, Appellants filed an Amendment on April 18, 2008 amending claims 1-4, 7-14, 16-17, 19-20, 22-24, 39-40, providing evidence and arguing against the claim rejections.

The Examiner then issued a Final Office Action dated June 12, 2008 in which the Examiner maintained the remaining rejections in the first Office Action. Claims 1-4, 7-14, 16, 17, 19, 20, 22, 23, and 39 were also rejected under 35 U.S.C. §112, first paragraph, alleging failure to comply with the written description requirement. Claims 1-4, 7-8, 11-14, 16-17, 19-20, 22-24, 27-28, 31-34, 36-37 and 39-40 are were rejected over Takagi in view of Rohrbach and Sillaots or U.S. Patent No.5,830,983 to Alex ("Alex") under 35 U.S.C. 103(a). Claims 9-10, 23, 29-30, and 38 were also rejected under 35 U.S.C. 103(a) over Takagi in view of Rohrbach and Sillaots or Alex and further in view of Kuhn.

In response to this Office Action, Appellants filed an Amendment on September 12, 2008 amending claims 1-4, 7-14, 16-17, 19-20, 22-24, and 39 and arguing against the claim rejections.

The Examiner then issued an Advisory Action dated September 19, 2008, indicating that the September 18, 2008 amendment was not entered.

In response to this Advisory Action, Appellants filed a Notice of Appeal with a Pre-Appeal Brief Request for Review on October 3, 2008 appealing the Final rejection. A Notice of Panel Decision from Pre-Appeal Brief Review was mailed on November 11, 2008 maintaining the rejections in the Final Office Action. An Appeal

Brief was filed pursuant to the Notice of Appeal filed on October 3, 2008 and the Pre-Appeal Brief Conference Decision dated November 3, 2008.

A First Revised Appeal Brief was filed on January 14, 2009 pursuant to a Notification of Non-Compliant Appeal Brief dated December 12, 2008. A Second Revised Appeal Brief was filed on March 13, 2009 pursuant to a Second Notification of Non-Compliant Appeal Brief dated February 25, 2009 for the reason of removing printouts of exemplary pages from websites submitted in the first Appeal Brief as Exhibits IV, V, and VI and replacing them with the URLs themselves. The websites were entered pursuant to the Request for Continued Examination on January 10, 2008 in response to an Advisory Action refusing to enter the evidence, whereby such evidence was entered by operation of law.

A Third Revised Appeal Brief was filed on June 26, 2009 pursuant to a Notification of Non-Compliant Appeal Brief dated June 23, 2009 for the reason of revising the statement of the status of the claims.

In response to a Fourth Notification of Non-Compliant Appeal Brief and an Advisory Action after Filing an Appeal Brief, each dated August 6, 2009, the Examiner entered the Amendment After-Final dated September 9, 2008. The Examiner also withdrew the following rejections:

- claims 1-4, 7-14, 16, 17, 19, 20, 22, 23, and 39 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement;
- claims 1-4, 7-8, 11-14, 16-17, 19-20, 22-24, 27-28, 31-34, 36-37 and 39-40 as rejected under 35 U.S.C. 103(a) over U.S. Patent No. 6,432,850 to Takagi ("Takagi") in view of U.S. Patent No. 5,774,236 to Rohrbach ("Rohrbach") and

U.S. Patent No. 3,842,465 to Sillaots or U.S. Patent No. 5,830,983 to Alex; and

- claims 9-10, 23, 29-30 and 38 as rejected under 35 U.S.C. 103(a) over Takagi in view of Rohrbach and Sillaots or Alex and further in view of U.S. Patent No. 4,803,096 to Kuhn ("Kuhn").

Appellant's attorneys submitted a Fifth Revised Appeal Brief dated October 20, 2009 to address the Examiner's stated rationale for non-compliance, namely, the entry of the Amendment After-Final dated September 9, 2008.

An Examiner's Answer citing new art and raising new issues was mailed on November 24, 2009.

Accordingly, the status of the claims may be summarized as follows:

Claims Withdrawn: 5-6, 25-26

Claims allowed: None.

Claims Objected to: None.

Claims Rejected: 1-4, 7-14, 16-17, 19-20, 22-24, 27-34 and 36-40

Claims Appealed: 1-4, 7-14, 16-17, 19-20, 22-24, 27-34 and 36-40

Claims Canceled: 15, 18, 21, 35

Rejected claims 1-4, 7-14, 16-17, 19-20, 22-24, 27-34 and 36-40 are set forth in the Appendix attached hereto. Appellants are appealing the Final rejection of claims 1-4, 7-14, 16-17, 19-20, 22-24, 27-34 and 36-40, which constitute all of the currently pending claims in this application.

## STATUS OF THE AMENDMENTS

Appellants filed an Amendment on September 12, 2008 amending claims 1-4, 7-14, 16-17, 19-20, 22-24, and 39. The Examiner then issued an Advisory Action dated September 19, 2008, indicating that the September 12, 2008 amendment was not entered. The Advisory Action dated August 6, 2009 after the filing of an Appeal Brief entered the Amendment dated September 12, 2008. Appellants believe that all the submitted Amendments have been entered.

## SUMMARY OF THE CLAIMED SUBJECT MATTER

The citations to Figures and Specification locations are provided immediately following elements of independent claims 1, and 24 which Appellants summarize below. However, such citations are merely examples and are not intended to limit the interpretation of the claims or to evidence or create any estoppel.

Claim 1 is directed toward an industrial fabric used in making nonwoven textiles in the airlaid, meltblown or spunbonding processes comprising a conductive engineered fabric. Page 4, lines 5-9. The fabric comprises a plurality of polymeric filaments having one or more C-shaped grooves with a mouth having a width less than the width of a central portion of the groove formed therein. Page 5, ln. 26- page 6, ln. 3; Figure 1, ref. no 18. Each filament includes electrically conductive polymer material incorporated as either a blend or a coating that substantially fills the C-shaped grooves. Page 4, lns. 21-32; Figure 1, ref. no. 14. The conductive fabric has static dissipation properties comparable to metal-based fabrics whilst being resistant to dents and creases. Page 4, line 32 to page 5, ln. 7. One or more C-shaped grooves allow for continued exposure of

the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity. Page 6, lns. 8-12.

Claim 24 recites an industrial fabric polymeric filament said polymeric filament having one or more C-shaped grooves with a mouth having a width less than the width of a central portion of the groove. Page 5, ln. 26- page 6, ln. 3; Figure 1, ref. no 18. The C-shaped grooves are substantially filled with electrically conductive polymer material mechanically locked in place. Page 4, lns. 21-32, page 5, ln. 32 to page 6, ln. 8; Figure 1, ref. no. 14. The one or more C-shaped grooves allow for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity. Page 6, lns. 8-12.

## GROUNDS FOR REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40 are patentable over U.S. Patent No. 6,432,850 to Takagi ("Takagi") in view of U.S. Patent No. 5,744,236 to Rohrbach et al ("Rohrbach") under 35 U.S.C. §103(a) as evidenced by U.S. Patent No. 5,998,310 to Bowen, Jr. ("Bowen").

Whether claims 9-10, 23, 29-30 and 38 are patentable under 35 U.S.C. §103(a) over Takagi in view of Rohrbach and further in view of U.S. Patent No. 4,803,096 to Kuhn.

## ARGUMENTS

### I. Claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40 are patentable over Takagi in view of Rohrbach under 35 U.S.C. §103(a).

The Examiner rejects claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40 under 35 U.S.C. §103(a) over Takagi in view of Rohrbach. Claims 1 and 24 are independent. Nothing in the cited art of record cures the deficiencies of the art as applied to independent claims 1 and 24. Thus dependent claims 2-4, 7-8, 11-14, 16-17, 19-20, 22-23, 27-28, 31-34, 36-37 and 39-40 stand or fall with independent claims 1 and 24. Claims 1 and 24 are patentable and non-obvious over Takagi in view of Rohrbach. For the reasons given below, Appellants traverse the rejection.

Claim 1 recites:

> **An industrial fabric used in making nonwoven textiles in the airlaid, meltblown or spunbonding processes** comprising a conductive engineered fabric comprising a plurality of polymeric filaments **having one or more C-shaped grooves with a mouth having a width less than the width of a central portion of the groove formed therein**, wherein each filament includes **electrically conductive polymer material incorporated as either a blend or a coating that substantially fills the C-shaped grooves**, said conductive fabric **having static dissipation properties comparable to metal-based fabrics whilst being resistant to dents and creases** and wherein the **one or more C-shaped grooves allow for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity**. (Emphasis added)

Claim 24 recites:

> **An industrial fabric polymeric filament** said polymeric filament having **one or more C-shaped grooves with a mouth having a width less than the width of a**

> **central portion of the groove, wherein said C-shaped grooves are substantially filled with electrically conductive polymer material mechanically locked in place** and wherein the one or more C-shaped grooves allow for **continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity**.

Accordingly, claim 1 recites an industrial fabric used in making nonwoven textiles by airlaid, meltblown and spunbond processes. Similarly, claim 24 recites an industrial fabric polymeric filament. In particular, claim 24 recites, "an industrial fabric polymeric filament with electrically conductive polymer material mechanically locked in place and wherein the one or more C-shaped grooves allow for **continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity**."

*New Interpretation Issues Raised by the Examiner's Answer*

After the filing of the Appeal Brief, the Examiner issued an Advisory Action and a Notice of Non-Compliant Appeal Brief, whereby the Examiner entered Applicant's Amendment after Final dated September 12, 2008, which changed the term "belt" to "fabric" in claims 1 and 24. The Examiner now uses this as a basis to argue *for the first time* in the Examiner's Answer that because the claims recite industrial fabrics, and "industrial fabric" is not defined in the specification, the Examiner is entitled to a "broadest reasonable interpretation" that covers "any fabric used in any industry." As this is a ***fundamentally new interpretation*** based on an amendment entered only after the filing of Appellants initial Appeal Brief, and which forced Applicant to argue in accord with the language as unentered (indeed, including arguing support for the term "belt," under 35 U.S.C. §112) the entry of the amendment after the filing of the Appeal Brief to

obtain a putatively broader claim scope for the rejection does not advance the case or crystallize issues for appeal. If the Examiner believed the entry of the amendment changed the scope of the claims, Appellants submit that the Examiner was obliged to particularly set forth such basis for the rejections in the Advisory Action of August 6, 2009, where the Examiner entered an amendment after filing the Appeal Brief. In a Notification of Non-Compliant Appeal Brief, the Examiner's statement, in its entirety, was: "[d]ue to the entering of the after final amendment of September 9, 2008, the appeal brief is not commensurate in scope with the current claims."

However, the Examiner's new, broader construction for the term "industrial fabric" is in no way commensurate with the broadest reasonable construction of the claim term. During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification. The Federal Circuit's en banc decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the 'broadest reasonable interpretation' standard.... The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999)." MPEP §2111.

Starting with the language of claims themselves. Claim 1 expressly recites that the filament is "**<u>used in making nonwoven textiles in the airlaid, meltblown or spunbonding processes</u>**" and independent claims 1 and 24 each recite that **<u>one or more C-shaped grooves allow for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its</u>**

**conductivity**." Continued exposure of the conductive polymer to the filament surface as the monofilament wears unambiguously refers to the wearing down of the filament on industrial process machinery, and in particular, the wear side of such a fabric, which is how industrial fabrics are used. Thus an interpretation of industrial fabrics that includes "any fabric in any industry" is inconsistent with the language of the claims themselves.

The specification itself also clearly shows that the Examiner's claim interpretation does not accord with the broadest reasonable interpretation consistent with the specification.

The specification of the present application states:

> A preferred embodiment of the present invention will be described **in the context of engineered fabrics**, **such as fabrics used in making non-woven textiles in the airlaid, meltblown and/or spunbonding processes**. However, it should be noted that the invention is also applicable to **other industrial fabrics used in any "dry" applications where the dissipation of static electricity is required, for instance, through the belting media**. Fabric constructions include woven, nonwoven, spiral-link, MD or CD yarn arrays, knitted fabric, extruded mesh, and spiral wound strips of woven and nonwoven materials. These fabrics may comprise monofilament, plied monofilament, multifilament or plied multifilament synthetic yarns, and may be single-layered, multi-layered or laminated.

The reference to engineered fabrics in non-woven textiles in the airlaid, meltblown and/or spunbonding processes (as recited in claim 1), as well as industrial fabrics in "dry" applications and the dissipation of static through "belting media," clearly shows that industrial fabrics within the scope of the claim refer to fabrics used in conjunction with industrial machinery and processes, such as papermaking and the manufacture of nonwovens. Such an interpretation is consistent with the art of record. See also U.S. Patent No. 5,998,310 to Bowen, Jr., newly cited by the Examiner: "In the production of paper and other industrial processes...." Col. 1, lns. 11-13. "The present invention provides stable, controlled medium and high permeability papermaking or industrial fabrics...." Col. 3 lns. 35-37.

As the specification and evidence show, ordinarily skilled artisans do not regard industrial fabrics as "any fabric used in any industry."

Thus the claims clearly recite industrial fabrics and the filaments used to construct the fabrics. Nonwovens manufacture and industrial fabrics are very specific in their use and are used in industrial applications on large machines under harsh, adverse conditions. Industrial fabrics are not dustproof clothing, as is the case with Takegi, discussed below. A skilled worker would not look to clothing as being applicable to the field of nonwovens manufacture and industrial fabrics. This is not a mere intended use. This is a specific article. Without it, the claim would be lacking in meaning.

This situation is analogous to that in *Corning Glass Works v. Sumitomo Electric*, 9 U.S.P.Q.2d 1962, 1966 (Fed. Cir. 1989). In that case the court held that the use of the term "optical waveguide" did not merely state a purpose or intended use. Rather, it

gave "life and meaning" to the claim and provided a further positive limitation to the invention claimed. The court, in making its determination, looked to the entire patent to determine and gain an understanding as to what the inventors actually invented and intended to encompass by the claim. The court noted that "[t]o read the claim in light of the specification indiscriminately to cover all types of optical fibers would be divorced from reality."

So too here, to read the claim language to cover all types of fabrics would be divorced from reality. It is clear from the specification that the invention is directed towards nonwovens manufacture and industrial fabrics. The environments in which these fabrics are used are much harsher and therefore require more durable fabrics than fabrics used for clothing. Industrial fabrics must be able to withstand the ravages of the industrial machinery on which they are used. Accordingly, a skilled worker would not look to fabrics for use in an article of clothing as being applicable to industrial fabrics. Again, this is not a mere intended use. This is a specific article. *Takegi's Fibers do not Relate to Industrial Fabrics*

As argued in the Appeal Brief, Takagi relates to garment fabrics for use in dust proof clothes. Such fabrics are <u>not</u> capable of being used as industrial fabrics.

Industrial fabrics used in making nonwoven textiles by airlaid, meltblown and spunbond processes typically use yarns having a diameter of 0.50mm or more (evidenced by page 3 of Exhibit I), and the linear density of such yarns is 2444 denier or higher (see conversion on page 358 of Exhibit II). The reason why yarns of such large diameter are used in industrial fabrics is because they are able to withstand the tension and load experienced by industrial fabrics, for example when used in processes such as

airlaid, meltblown and spunbonding process. Industrial fabrics such as the claimed fabric are often subject to high stresses due to applied tension (required to prevent slippage of the conveyor belt on the machine drive rolls), stretching, heavy loads conveyed by the belt, high speed movement combined with side to side movement induced by guiding systems or off-tracking problems, and thermal extremes or thermal shocks. The breaking load of even a 0.50mm diameter industrial yarn is around 10.41daN (see page 202 of Exhibit II), which is equivalent to 23.40lb-force, and an industrial belt formed using such industrial yarns has a breaking strength that measures tens of hundreds of lb-force, and operate under tensions of 20-50pli (pounds per linear inch) of the belt. Takagi, which uses fibers having a linear density of 200 denier or less, simply **cannot** be used in such environments. In other words, Takagi's fibers are **not** suitable for the above-claimed fabric.

For the reasons given above, Takagi's garment fabrics **cannot be used as an industrial fabric, especially in an airlaid, meltblown or spunbonding process**. At page 14 of the Final Office Action, the Examiner proffers three rationales as justification for dismissing Appellants' evidence on this point. The Examiner's dismissal is improper, for the reasons that follow.

As pointed out during prosecution and in the Appeal Brief of record, first the Examiner states that it is not clear that the Exhibit I is drawn to an industrial belt (fabric). Appellants disagree. Exhibit I explicitly refers to the "belt design" at page 6, where it expressly states, among other things, that the "belt design" allows for "less machine shut-downs," and that it has "[g]ood web release." It is also referred to and pictured as an industrial fabric throughout. Moreover, throughout the Exhibit it refers to the fabric's

use as a belt in a machine (e.g. yarn on the machine side, machine direction and cross machine direction yarns on page 3, web release on pages 4 and 6, and other machine characteristics throughout). The Exhibit further explains that the belts disclosed in the Exhibit are for use on Reicofil machines. See pages 1, 4, 6, and 8-10. Appellants also directed the Examiner's attention to www.reicofil.com, where the machines used for its spunbonding and meltblown lines are shown. Exemplary pages printed out from this website are attached as Exhibit III.[1] A cursory review of the website and the machines therein suffice to further demonstrate that the Exhibit I refers to an industrial fabric.

Second, the Examiner alleges Exhibits I and II are not sufficient evidence because they are drawn to PET, polyester, and nylon, instead of "the broad range of materials covered by the claim." The Examiner has incorrectly shifted the burden of

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[1] The record is unclear whether the Examiner deems the website evidence that needs to be entered. It was provided in the September 12, 2008 Response to the Final Office Action as a convenience to the Examiner so he could quickly view a Reicofil machine, named in Exhibit I, as he alleged it was unclear to him that Exhibit I was directed toward an industrial belt. While the Advisory Action of September 19, 2008 checked a box that stating other evidence would not be entered, no explanation was given as to what he meant. The Examiner did not object to the printout of the website's inclusion in the evidence appendix of the first Appeal Brief in his the Second Notice of Non-Complaint Appeal Brief, although other website printouts were challenged, nor in any of the subsequent Notices. Appellants thus understand that the Examiner considered the website as of the Advisory Action dated September 19, 2008, i.e. when it was provided in the Response to the Final Office Action.

proof, and more to the point, did not answer the evidence. The material Takagi uses to exemplify its single fibers of 10-220 denier, and preferably 10-100 denier, is polyester, and polymide (nylon 6, nylon 66, etc.). See Col. 3, line 69 to Col. 4, line 7; Col 4 lines 27-30 to Takagi. **The Exhibits clearly show that Takagi's yarns are utterly inappropriate for the claimed industrial belts. In particular the evidence shows, as the Examiner acknowledges, that polyester and nylon – the very yarns Takagi disclose – must be of far greater strength and have far greater diameter and linear density to meet the requirements for the claimed industrial fabrics.**

*The Newly Cited Art does Not Cure the Deficiencies of Takegi*

Throughout prosecution and in the Appeal Brief, Appellants amply explained and evidenced the inadequacy of fibers of 200 denier or less for industrial processes as laid out above, and such evidence was left unaddressed. Appellants' thereby met any evidentiary burdens it may have had, which remained unrebutted, which demonstrates that Takagi fails to disclose any yarn usable in an industrial fabric. In the Answer, the Examiner ***for the first time*** newly cites and argues that U.S. Patent No. 5,998,310 to Bowen, Jr. ("Bowen") allegedly shows Takegi's 200 or less denier filaments are suitable for industrial fabrics, including those used in making nonwoven textiles in airlaid, meltblown, or spunbonding processes as claimed in claim 1. In particular he states Bowen shows that PET, nylon 6, and nylon 66 – the materials of Takegi's filaments – in papermaking fabrics, particularly dryer fabrics.

First, such a citation can only be considered a new ground of rejection, although the Examiner refused to cite is as such. "**A new prior art reference >applied or< cited for the first time in an examiner's answer generally will constitute a new**

**ground of rejection**. If the citation of a new prior art reference is necessary to support a rejection, **it must be included in the statement of rejection**, which would be considered to introduce a new ground of rejection. **Even if the prior art reference is cited to support the rejection in a minor capacity, it should be positively included in the statement of rejection**." MPEP 1207.03, citations omitted.

The Examiner's citation of Bowen, which the Examiner admits is "rebuttal" evidence at pages 3 and 11 of the Answer, comes in response to Exhibits I and II and the remarks related thereto, which Appellants submitted in an Amendment dated **April 18, 2008**, and which the Examiner entered in a Final Office Action dated **June 12, 2008**. Thus Appellants clearly set forth arguments and evidence in a previous reply **during prosecution** of the application and the Examiner, by his own admission, has failed to address that evidence until the Examiner's Answer. See MPEP 1207.03. The Examiner **does not** cite Bowen for evidence of a prior statement made by the examiner as to what is "well-known" in the art which was challenged for the first time in the Appeal Brief. MPEP 1207.03. Thus, by waiting until the Examiner's Answer rely on new evidence to support a *prima facie* case and "rebut" evidence and arguments provided before the Final Office Action and Notice of Appeal in the present case, the Examiner attempts to deprive Appellants a fair opportunity to react to the rejection in view of the newly cited art. *Id*.

Nonetheless, the citation of Bowen is less detailed than Exhibits I and II, and indeed, in light of the Exhibits, proves the inadequacy of Takegi's filaments for industrial fabrics. As Appellants argued prior to the Final Office Action, Notice of Appeal, and Appeal Brief and above, industrial belts (fabrics) used in making nonwoven textiles by

airlaid, meltblown and spunbond processes typically use yarns having a diameter of 0.50mm or more (evidenced by page 3 of Exhibit I), and the linear density of such yarns is 2444 denier or higher (see conversion on page 358 of Exhibit II). Again the reason why yarns of such large diameter are used in industrial belts is because they are able to withstand the tension and load experienced by industrial belts, for example when used in processes such as airlaid, meltblown and spunbonding process. Industrial belts such as the claimed belt are often subject to high stresses due to applied tension (required to prevent slippage of the conveyor belt on the machine drive rolls), stretching, heavy loads conveyed by the belt, high speed movement combined with side to side movement induced by guiding systems or off-tracking problems, and thermal extremes or thermal shocks. The breaking load of even a 0.50mm diameter industrial yarn is around 10.41daN (see page 202 of Exhibit II), which is equivalent to 23.40lb-force, and an industrial belt formed using such industrial yarns has a breaking strength that measures tens of hundreds of lb-force, and operate under tensions of 20-50pli (pounds per linear inch) of the belt. Takagi, which uses fibers having a linear density of 200 denier or less, simply **cannot** be used in such environments. In other words, Takagi's fibers are **not** suitable for the above-claimed industrial fabric. This is especially so with filiments that may be subject to "**<u>continued exposure of the conductive polymer to the filament surface as the monofilament wears,</u>**" as recited in the claims, as it is the wear side filaments that are directly subject to breaking forces.

Moreover, as the charts at 358-361 of Exhibit II show, the conversions for polyester monofiliments and nylon monofiliments are specifically given. As shown in pages 358 and 360 of Exhibit II, the lowest denier given for conversion is around 100

(e.g., 95 and 83 respectively), and from there goes upward to 10,080 in the case of polyester and 33,280 in the case of nylon. Bowen discloses "papermaking or industrial fabrics, especially dryer fabrics." See column 3, lines 35-39. Consistent with the Exhibits above, at column 5, lines 28-29, Bowen, referring to all representative papermaking or industrial fabric yarns, states "...the denier of (industrial fabric) fibers are high, **typically from 100 to 6000**." Emphasis added. Moreover, as shown by the examples at column 6, lines 11-47, for the exemplary fabrics of Bowen, the smallest diameters for a yarn is 0.35 by 0.53 mm (warp) and 0.50 (weft). Deniers of the weft are given as **2200 and 1150**. Column 6, lines 16 and 23. For Bowen's warps, *assuming purely for the sake of argument* a polyester monofilament that was 0.35mm entire (which it is not), such a yarn would have a denier of 1,199, and if nylon, 990. See pages 358 and 360 of Exhibit II. As the warps are 0.35mm by 0.53 mm, the denier for the warps are higher.

The evidence shows that the ostensible denier overlap of 100-220 denier for Bowen's and Takegi's filaments represents the absolute smallest filaments one might find in Bowen's industrial fabric, whereas these represent the absolute maximum sizes for Takegi's filaments. The preferred denier filaments of Takegi (10-100 denier) and Bowen's examples (1150 and 2200), quite in accord with the arguments of record, diverge well outside one another, and rebut any belated *prima facie* case made in the Examiner's Answer. Accordingly, the minimal nature of the speculative overlap, the great divergence in the denier of real examples and the exhibits and evidence of record, shows that filaments for garments are different-in-kind then those for industrial fabrics.

Thus, as we have evidenced throughout prosecution, industrial belts (fabrics) used in making nonwoven textiles by airlaid, meltblown and spunbond processes typically use yarns having a diameter of 0.50mm or more (evidenced by page 3 of Exhibit I, and now Bowen), and the linear density of such yarns is 2444 denier or higher (see conversion on page 358 of Exhibit II). Bowen, which discloses papermaking fabrics, is utterly consistent with this evidence. Far from rebutting Appellants evidence that Takegi's filaments are inappropriate for industrial fabrics, Bowen instead supports it. Moreover, the evidence also conclusively rebuts any *prima facie* case made by the belated citation of Bowen.

*Rohrbach's Filament Cannot Undergo Wear and Retain Conductivity*

As to Rohrbach, it is directed to a nonwoven filter media designed to entrap particles without adhesive. *Rohrbach*, Abstract. As recited in independent claims 1 and 24, the claims recite polymeric filaments and the industrial belts constructed therefrom, wherein the polymeric filaments comprise, *inter alia*, "one or more C-shaped grooves with a mouth having a width less than the width of the central portion of the groove" wherein an electrically conductive polymer substantially fills the C-shaped grooves, "and wherein the one or more C-shaped grooves **allow for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity**." (Emphasis added). Claim 24 further recites that **"said C-shaped grooves are substantially filled with electrically conductive polymer material mechanically locked in place."** Substantially filling the C-shaped grooves with the electrically conductive polymer allows continued exposure of the highly conductive polymer to the surface of the fabric even as the monofilament wears while

also shielding and protecting the conductive polymer material. *Instant Application*, page 6, lines 4-12.

On page 4 of the Final Office Action the Examiner asserts that the configuration taught by Rohrbach "inherently" allows for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity. Appellants respectfully disagree. First, Rohrbach is directed to fibers for use in nonwoven filter media having cavities that entrap powdered activated carbon adsorbent particles. *See Rohrbach*, col. 1, lines 45-63. To form the filter media of Rohrbach, solid particles are aggressively rubbed into the individual fibers. The procedure used to accomplish this dry impregnation is to take the fibers and liberally dust them with the adsorbent powder. The powder particles are rolled into the fiber several times. The powder particles which remain within the cavities of the fibers are surprisingly stable and resistant to physical action. *See id.* at col. 3, lines 38.

Rohrbach further discloses that they do not know the exact reason why the particles remain within the cavities, but they believe it is a keystone type mechanical entrapment effect where the particles seem to engage each other and do not spill from the cavities through the cavity openings. *See id.* at col. 3, lines 37-42. Lastly, and most importantly, Rohrbach states, "[w]e tried impregnating trilobal fiber in which the outer ends or caps of the lobes 26 were removed. Very little carbon particles were retained by such fibers." *Id.* at col. 3, lines 42-45. Consequently, Appellants assert that if the tops or caps of the T-shaped lobes (indicated in the below drawing, which is an annotated version of Figure 3 from Rohrbach) were to wear, the keystone type

mechanical entrapment effect within the cavities would fail, causing the powder particles to spill or fall-out of the cavities.

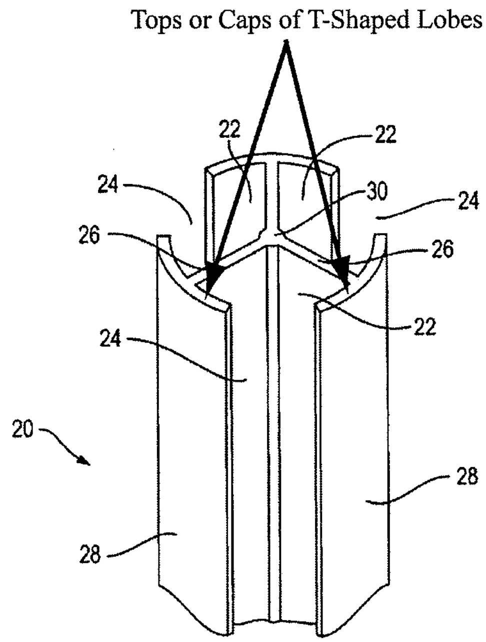


FIG. 3

Therefore, Appellants assert that Rohrbach both fails to disclose and in fact teaches away from a monofilament that allows for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity, as required by the claims. As the Supreme Court said in *KSR International Co. v. Teleflex Inc.* (KSR), 550 U.S. ___, 82 USPQ2d at 1395 (2007) (citing *U.S. v. Adams*, 383 U.S. 39,40): "[W]hen the prior art teaches away from combining certain known elements, discovery of successful means of combining them is more likely to be non-obvious." In addition, a "'reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant.'" *Id.* at 1350 (quoting *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994)).

This case presents a textbook example of a reference teaching away from the result sought by the applicant. As discussed above, the claimed invention is advantageous in that the monofilaments and hence the fabric, remain electrically conductive as the monofilaments wear because of continued exposure of the conductive polymer to the monofilament surface.

Therefore the skilled artisan confronted with the problem articulated by the Applicant, namely the need for a highly durable electrically conductive industrial fabric, would clearly have been led away from the approach taken by Appellants after having read the Rohrbach reference because, as previously discussed, as the Rohrbach fiber wears, the powder particles entrapped within the cavities would spill out, resulting in a fiber that would not have the same characteristics and properties as a fiber still containing the powder particles.

Consequently, because Rohrbach teaches away from the instant invention and because all of the rejections are based on Rohrbach in combination with Takagi, the §103 rejections must fail as a matter of law.

*Neither Takagi nor Rohrbach are Analogous Art*

Finally, Takagi and Rohrbach **do not** even remotely relate to industrial belts or fabrics. Thus neither Takagi nor Rohrbach are **analogous art**, and for this reason alone, the rejection of claim 1 under §103(a) over Takagi in view of Rohrbach must be withdrawn. Following the decision by the Supreme Court of the United States in *KSR International v. Teleflex, Inc.*, 127 S.Ct. 1727, 167 L.Ed2d 705, 82 U.S.P.Q.2d 1365 (2007), the analogous art requirement remains an important part of the primary analysis under *Graham v John Deere Co. of Kansas City*, 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed.2d

545, 148 U.S.P.Q. 459 (1966). As recently re-stated by the Board of Patent Appeals and Interferences:

> The analogous-art test requires the Board to show that a reference is either in the field of the applicant's endeavor or is reasonably pertinent to the problem with which the inventor was concerned in order to rely on that reference as a basis for rejection.

*Ex Parte Bartly et al.*, 2008 WL 275524 (Bd.Pat.App. & Interf. 2008) (Appeal No. 2007-2583).

The Board has further explained that:

> In view of KSR's holding that "any problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the matter claimed" [citation omitted] it is clear that the **second part** of the analogous-art test as stated [above] must be expanded to require a determination of **whether the reference**, even though it may be in a different field from that of the inventor's endeavor, is one which, because of the matter with which it deals, **logically** would have commended itself to an artisan's (not necessarily the inventor's) attention in considering **any need or problem** known in the field of endeavor.

*Id.*, at 2008 WL 275525 (emphasis added); and *Ex Parte Morrow*, 2008 WL 1997942 (Appeal No. 2007-3972, which further states that "although under *KSR* it is not always necessary to identify a known need or problem as a motivation for modifying or combining the prior art, it is nevertheless **always necessary** that the prior art relied on to prove obviousness be **analogous.**") (Emphasis added).

See also, *Ex Parte Kurt*, 2007 WL 4470067 (Bd. Pat. App. & Interf., 2007) (Appeal No. 2007-4172) in which an obviousness rejection was reversed because the cited prior art, directed to extreme UV radiation optical elements, was found to be non-analogous to the claims at issue, which were directed to photolithographic projection. As stated by the Board in *Ex Parte Kurt*, "in the present case, even one looking outside Appellant's field of endeavor would not look to Morshita's Mo-Cr metal mold material to cure the deficiencies of Shiraishi's lithographic optical system" (*Id.*, 2007 WL at 4470069).

In the present case, the claim 1 recites: "**[a]n industrial fabric used in making nonwoven textiles in the airlaid, meltblown or spunbonding processes** comprising a conductive engineered fabric .... **having static dissipation properties comparable to metal-based fabrics whilst being resistant to dents and creases**." Claim 24 recites "C-shaped grooves are substantially filled with **electrically conductive polymer material mechanically locked in place** ...[where] **the monofilament wears so that the filament retains its conductivity**." There is no need or problem known in the field of such machines that requires making the industrial fabrics dustproof, which is the reason for Takegi's antistatic clothes. Moreover, the claim expressly recites that the fabric be resistant to dents and creases; whereas denting and creasing are necessary

and desirable properties in clothing (e.g., to allow mobility). Quite simply, and ordinarily skilled artisan would not look to garment fabrics to solve problems of industrial fabrics.

Yet even assuming *arguendo* that an artisan would to look to Takegi, an ordinarily skilled artisan would not look to Rohrbach's filtering fabric designed to entrap particles in order to cure Takegi's deficiencies. Indeed, given that Takegi teaches making clothes dustproof, whereas Rohrbach teaches designing filters to entrap particles without adhesive (see *Rohrbach*, abstract, column 1, lines 45-50), an ordinarily skilled artisan would not combine the two to create either a filter that repels dust or dust-free clothing that traps particles. It follows that neither reference combines or logically commends itself to an artisans attention to disclose, much less render obvious, "**[a]n industrial belt used in making nonwoven textiles in the airlaid, meltblown or spunbonding processes** comprising a conductive engineered fabric .... **having static dissipation properties comparable to metal-based fabrics whilst being resistant to dents and creases**, " as claimed in claim 1 or a monofilament with "C-shaped grooves are substantially filled with **electrically conductive polymer material mechanically locked in place** ...[where] **the monofilament wears so that the filament retains its conductivity**" as claimed in claim 24.

Appellants submit therefore, that even under the post-*KSR* analysis of analogous-art, both the Takegi and Rohrbach references fail to qualify as analogous art with each other, much less with the presently claimed invention. Specifically, Takagi and Rohrbach are directed to a garment and hollow fibers for use in nonwoven filter media respectively, and **not** to an industrial fabric as recited in the above-recited claims.

Appellants thus respectfully submit that the ground of rejection in the Office Action over these references must be withdrawn.

For at least the foregoing reasons, Appellants respectfully submit that independent claims 1 and 24 are patentable over the relied upon portions of Takagi and Rohrbach, considered either alone or in combination, and are therefore allowable. Claims 2-4, 7-8, 11-14, 16-17, 19-20, 22-23, 27-28, 31-34, 36-37 and 39-40 each depend from independent claims 1 and 24, discussed above, and are therefore patentable for at least the same reasons. Therefore, Appellants respectfully request reversal of the § 103 rejections in the Office Action by this Honorable Board.

## II. Claims 9-10, 23, 29-30 and 38 are patentable over Takagi in view of Rohrbach and further in view of U.S. Patent No. 4,803,096 to Kuhn under 35 U.S.C. §103(a).

Claims 9-10, 23, 29-30 and 38 are rejected under 35 U.S.C. §103(a) over Takagi in view of Rohrbach and further in view of U.S. Patent No. 4,803,096 to Kuhn. Claims 2-4, 7-8, 11-14, 16-17, 19-20, 22-23, 27-28, 31-34, 36-37 and 39-40 each depend from independent claims 1 and 24, discussed above, and are therefore patentable for at least the same reasons. Nothing in the cited art of record cures the deficiencies of the art as applied to independent claims 1 and 24. Thus dependent claims 2-4, 7-8, 11-14, 16-17, 19-20, 22-23, 27-28, 31-34, 36-37 and 39-40 stand or fall with independent claims 1 and 24. Appellants thereby respectfully request reversal of the rejections and allowance of the claims by this Honorable Board.

## CONCLUSION

For the reasons discussed above, claims 1-4, 7-14, 16-17, 19-20, 22-24, 27-34 and 36-40 are patentable. It is, therefore, respectfully submitted that the Examiner erred in rejecting claims 1-4, 7-14, 16-17, 19-20, 22-24, 27-34 and 36-40, and Appellants request a reversal of these rejections by this Honorable Board. As a result, the allowance of this application should be mandated.

Respectfully submitted,

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## APPENDIX I

## CLAIMS ON APPEAL

What is claimed is:

1. (Previously Presented) An industrial fabric used in making nonwoven textiles in the airlaid, meltblown or spunbonding processes comprising a conductive engineered fabric comprising a plurality of polymeric filaments having one or more C-shaped grooves with a mouth having a width less than the width of a central portion of the groove formed therein, wherein each filament includes electrically conductive polymer material incorporated as either a blend or a coating that substantially fills the C-shaped grooves, said conductive fabric having static dissipation properties comparable to metal-based fabrics whilst being resistant to dents and creases and wherein the one or more C-shaped grooves allow for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity.

2. (Previously Presented) The industrial fabric in accordance with claim 1, wherein the functional filaments constitute between five and one hundred percent of the fabric.

3. (Previously Presented) The industrial fabric in accordance with claim 1, wherein the fabric has static dissipation properties equivalent to metal-based fabrics whilst also having physical properties comparable to non-conductive synthetic fabrics.

4. (Previously Presented) The industrial fabric in accordance with claim 3, wherein said physical properties include one of modulus, tenacity, strength, adhesion, abrasion resistance, and durability.

5. (Withdrawn) The fabric in accordance with claim 1, wherein the filament comprises conductive polymer material blended with polymeric materials that can be oriented.

6. (Withdrawn) The fabric in accordance with claim 1, wherein the filament is a bicomponent fiber containing conductive polymer material and formed by melt extrusion.

7. (Previously Presented) The industrial fabric in accordance with claim 1, wherein the filament comprises an oriented structure coated with conductive polymer material.

8. (Previously Presented) The industrial fabric in accordance with claim 7, wherein the conductive polymer is applied by one of dip coating, spraying from solutions, dispersion over the filament, and thermal spraying.

9. (Previously Presented) The industrial fabric in accordance with claim 1, wherein the filament comprises one hundred percent conductive polymer material selected from the class of polyanilines.

10. (Previously Presented) The industrial fabric in accordance with claim 9, wherein said polyaniline filament has physical properties comparable to a polyamide filament.

11. (Previously Presented) The industrial fabric in accordance with claim 1, wherein the filament is a lobed monofilament coated with conductive polymer material.

12. (Previously Presented) The industrial fabric in accordance with claim 11, wherein the coating has a conductivity, minimally greater than $10^{-3}$ S/cm, whilst maintaining the physical and tribological properties of the core monofilament.

13. (Previously Presented) The industrial fabric in accordance with claim 11, wherein the shape of the one or more C-shaped grooves provide a mechanical interlock between the monofilament and the conductive polymer filling the grooves.

14. (Previously Presented) The industrial fabric in accordance with claim 13, wherein the interlock reduces a need for adhesion of the conductive polymer to the monofilament.

15. (Canceled).

16. (Previously Presented) The industrial fabric in accordance with claim 13, wherein positioning of the conductive polymer in the C-shaped grooves shields the polymer and reduces the impact of its lesser abrasion resistance and physical properties.

17. (Previously Presented) The industrial fabric in accordance with claim 11, wherein the weight composition of the conductive material is ten percent or less of the total weight of the coated monofilament.

18. (Canceled).

19. (Previously Presented) The industrial fabric in accordance with claim 1, wherein the fabric is single layered , multi layered, or laminated.

20. (Previously Presented) The industrial fabric in accordance with claim 1, wherein the fabric is one of woven, nonwoven, spiral-link, MD or CD yarn arrays, knitted fabric, extruded mesh, and spiral wound strips of woven and nonwoven materials comprising yarns including monofilaments, plied monofilaments, multifilaments, plied multifilaments and staple fibers.

21. (Canceled).

22. (Previously Presented) The industrial fabric in accordance with claim 1, wherein the fabric is used in a dry application in which static dissipation is required through a belting media.

23. (Previously Presented) The industrial fabric in accordance with claim 1, wherein the conductive polymer is one of polyacetylene (PA), polythiophene (PT), poly3alkyl-thiophene) (P3AT), polypyrrole (Ppy), poly-isothianaphthene (PITN), poly(ethylene dioxythiophene (PEDOT), alkoxy-substituted poly(para-phenylene vinylene) (PPV), poly(para-phenylene vinylene) (PPV), poly(2,5-dialkoxy-para-phenylene), poly(paraphenylene) (PPP), ladder-type poly(para-phenylene) (LPPP), poly(para-phenylene) sulfide (PPS), polyheptadiyne(PHT), and poly(3-hexyl thiophene) (P3HT).

24. (Previously Presented) An industrial fabric polymeric filament said polymeric filament having one or more C-shaped grooves with a mouth having a width less than the width of a central portion of the groove, wherein said C-shaped grooves are substantially filled with electrically conductive polymer material mechanically locked in place and wherein the one or more C-shaped grooves allow for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity.

25. (Withdrawn) The filament in accordance with claim 24, wherein the filament comprises conductive polymer material blended with polymeric materials that can be oriented.

26. (Withdrawn) The filament in accordance with claim 24, wherein the filament is a bicomponent fiber containing conductive polymer material and formed by melt extrusion.

27. (Original) The filament in accordance with claim 24, wherein the filament comprises an oriented structure coated with conductive polymer material.

28. (Original) The filament in accordance with claim 27, wherein the conductive polymer is applied by one of dip coating, spraying from solutions, dispersion over the filament, and thermal spraying.

29. (Original) The filament in accordance with claim 24, wherein the filament comprises one hundred percent conductive polymer material selected from the class of polyanilines.

30. (Original) The filament in accordance with claim 29, wherein said polyaniline filament has physical properties comparable to a polyamide filament.

31. (Original) The filament in accordance with claim 24, wherein the filament is a lobed monofilament coated with conductive polymer material.

32. (Previously Presented) The filament in accordance with claim 31, wherein the coating has a conductivity, minimally greater than $10^{-3}$ S/cm, whilst maintaining the physical and tribological properties of the core monofilament.

33. (Previously Presented) The filament in accordance with claim 31, wherein the shape of the C-shaped grooves provide a mechanical interlock between the monofilament and the conductive polymer filling the grooves.

34. (Original) The filament in accordance with claim 33, wherein the interlock reduces a need for adhesion of the conductive polymer to the monofilament.

35. (Canceled).

36. (Previously Presented) The filament in accordance with claim 33, wherein positioning of the conductive polymer in the C-shaped grooves shields the polymer and reduces the impact of its lesser abrasion resistance and physical properties.

37. (Original) The filament in accordance with claim 31, wherein the weight composition of the conductive material is ten percent or less of the total weight of the coated monofilament.

38. (Original) The filament in accordance with claim 24, wherein the conductive polymer is one of polyacetylene (PA), polythiophene (PT), poly3alkyl-thiophene) (P3AT), polypyrrole (Ppy), poly-isothia-naphthene (PITN), poly(ethylene dioxythiophene (PEDOT), alkoxy-substituted poly(para-phenylene vinylene) (PPV), poly(para-phenylene vinylene) (PPV), poly(2,5-dialkoxy-para-phenylene), poly(para-phenylene) (PPP), ladder-type poly(para-phenylene) (LPPP), poly(para-phenylene) sulfide (PPS), polyheptadiyne(PHT), and poly(3-hexyl thiophene) (P3HT).

39. (Previously Presented) The industrial fabric in accordance with claim 11, wherein the coating has a conductivity greater than $10^3$ S/cm, whilst maintaining the physical and tribological properties of the core monofilament.

40. (Previously Presented) The filament in accordance with claim 31, wherein the coating has a conductivity greater than $10^3$ S/cm, whilst maintaining the physical and tribological properties of the core monofilament.

## APPENDIX II

## EVIDENCE

I. Exhibit I: Entered by the Examiner in the Office Action mailed June 12, 2008.

II. Exhibit II: Entered by the Examiner in the Office Action mailed June 12, 2008.

III. Exhibit III: Understood to be considered and entered by the Examiner as of the Advisory Action dated September 19, 2008.

# EXHIBIT I

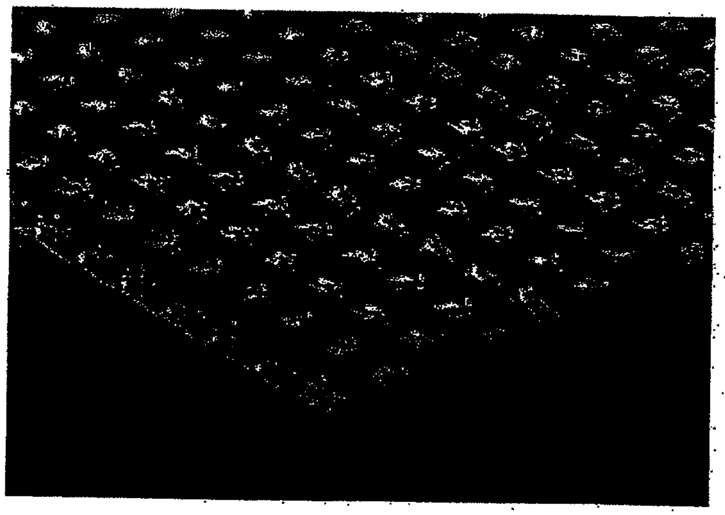
EXHIBIT I

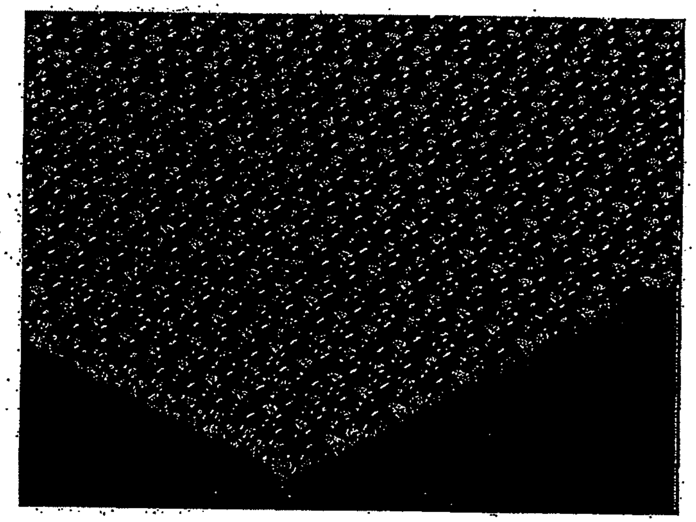
# *NEOSTAT 2001*

**The new solution for your Reicofil line ...**

**COFPA**

# NEOSTAT 2001





*Neostat* design.

Velostat 170 PC 500 design

COFPA

# NEOSTAT 2001

Neostat 2001 versus Velostat 170PC 500

| Design | Air Permeability (CFM) | MD Yarns | CMD Yarns |
|---|---|---|---|
| Neostat 2001 | 550 | 0.5 mm PET and conductive yarns | Flat yarn close to the product in order to increase fiber retention and big yarn on machine side |
| Velostat 170PC 500 | 500 | 0.5 mm PET and conductive yarns | Big yarn in cross machine direction |

COFPA

# *NEOSTAT 2001*

- ***NEOSTAT*** is the result of a 2 years joint development between Cofpa and Reifenhäuser.
  - Objective : this new patented design should solve at the same time operating problems on the last generation of Reicofil machines such as : fiber penetration, cleanliness, web release. This goal needs to be achieved with a durable and stable fabric design.

COFPA

# NEOSTAT 2001

- Main benefits:
  - Improved fiber support
  - Better formation
  - Easy to clean
  - Mechanical stability and resistance
  - Quick start-up

COFPA

# NEOSTAT 2001

⌘Improved fiber support thanks to belt design :

- Vacuum boxes stay cleaner for longer periods - less machine shut-downs
- Good web release

COFPA

# NEOSTAT 2001

- Better formation :
  - By keeping vacuum boxes clean, uniformity of formation is guaranteed over longer periods of time.

COFPA

# *NEOSTAT 2001*

- ⌘Easy to clean :
  - A single layer design as *Neostat* with higher fiber support thanks to flat yarn closed to the top. This allows polymer drops to stay on surface and to be easily removed
  - Multi layer designs with higher yarns density have shown good fibers retention. In this case fibers are trapped inside the fabric and are more difficult to clean.

COFPA

# *NEOSTAT 2001*

- ⌘Mechanical strength :
  - By using thick monofilaments, *Neostat* design retains a high mechanical strength :
    - ☒reduced risk of damage during production
    - ☒supports shock wash (high-pressure, high temperature) and removal of polymer drips with scraper

# NEOSTAT 2001

- Quick start-up :
  - No grinding or other startup procedure is necessary. Full production speed can be reached immediately after installation of a new fabric. This will bring you value by increasing throughput.

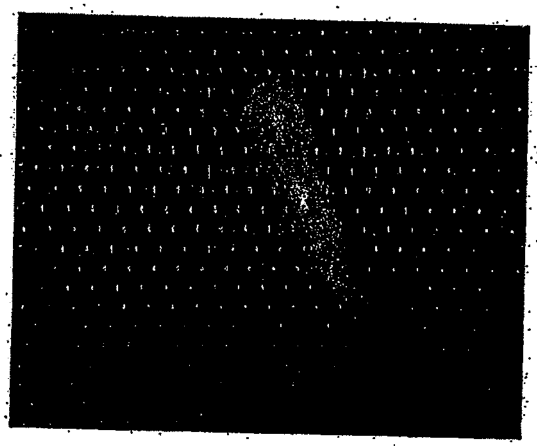
# NEOSTAT 2001

⌘Neostat design is tested and used on:

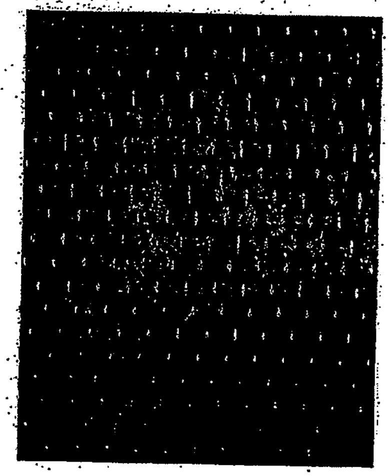
- Reicofil 3 MF, SSMMS: producing SSS and SSMMS :
- Reicofil 4: producing SS, SSS, SMMMS

COFPA

# NEOSTAT 2001



Polymer drip on ***NEOSTAT***



After cleaning with scraper only

⌘ Polymer drops are not embedded in the fabric and are easier to remove

COFPA

# EXHIBIT II

EXHIBIT II

Asten

# PAPER MACHINE CLOTHING


Sabit Adanur, B.S., M.S., Ph.D.

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TABLE 4.2. Properties of Polyester Dryer Yarn Material (diameter: 0.5 mm).

| | Density (dtex) | Tenacity (cN/tex) | Breaking Load (daN) | Elongation (%) | Free Shrinkage (%) (180°C, 30 min) | Testrite (%) (180°C, 2 min) | Loop Strength daN | Loop Strength % |
|---|---|---|---|---|---|---|---|---|
| | 2832 | 36.5 | 10.33 | 41.6 | 4.0 | 2.7 | 17.2 | 82.6 |
| | 2835 | 36.8 | 10.41 | 40.6 | 4.1 | 2.5 | 18.21 | 87.5 |
| | 2836 | 37.2 | 10.54 | 43.2 | 4.0 | 2.7 | 15.39 | 73.9 |
| | 2826 | 37.2 | 10.54 | 41.0 | 4.1 | 2.6 | 17.21 | 82.7 |
| | 2829 | 37.0 | 10.49 | 41.1 | 4.1 | 2.7 | 14.52 | 69.8 |
| | 2830 | 35.9 | 10.16 | 37.4 | 4.1 | 2.6 | 16.80 | 80.7 |
| | 2833 | 36.8 | 10.41 | 41.7 | 3.9 | 2.6 | 15.75 | 75.7 |
| | 2832 | 36.9 | 10.45 | 41.8 | 4.0 | 2.6 | 18.61 | 89.4 |
| | 2830 | 36.4 | 10.32 | 43.0 | 3.9 | 2.6 | 15.31 | 73.6 |
| | 2837 | 36.8 | 10.41 | 41.5 | 4.0 | 2.5 | 16.54 | 79.5 |
| Average | 2832 | 36.7 | 10.41 | 41.3 | 4.0 | 2.6 | 16.55 | 79.5 |
| Minimum | 2826 | 35.9 | 10.16 | 37.4 | 3.9 | 2.5 | 14.52 | 69.8 |
| Maximum | 2837 | 37.2 | 10.54 | 43.2 | 4.1 | 2.7 | 18.61 | 89.4 |
| s | 3.2 | 0.4 | 0.12 | 1.6 | 0.1 | 0.04 | 1.32 | |
| v | 0.1% | 1.1% | 1.1% | 3.8% | 1.9% | 1.5% | 7.9% | |
| Certificate | | 36.8 | | 39.2 | 3.0 | | | |
| Product tolerance: | 2750 ± 150 | 36.0 ± 4.0 | 10.2 (9.5–11) | 41.0 ± 6.0 | 3.5 ± 1.0 | 2.5 ± 1.0 | | |

## POLYESTER MONOFILAMENT SIZE EQUIVALENCY CHART

| Diameter Thousandths of an Inch (mil.) | Diameter Millimeters | Denier | Decitex | Yards/lb. | Meters/Kg. |
|---|---|---|---|---|---|
| .0039 | .10 | 95 | 106 | 45,591 | 93,881 |
| .004 | .1016 | 100 | 112 | 44,289 | 89,243 |
| .0043 | .11 | 116 | 129 | 38,327 | 77,230 |
| .0047 | .12 | 139 | 154 | 32,078 | 64,638 |
| .005 | .1270 | 157 | 175 | 28,345 | 57,115 |
| .0051 | .13 | 163 | 182 | 27,245 | 54,899 |
| .0055 | .14 | 190 | 211 | 23,425 | 47,201 |
| .0059 | .15 | 219 | 243 | 20,357 | 41,020 |
| .006 | .1524 | 226 | 252 | 19,684 | 39,663 |
| .0063 | .16 | 250 | 277 | 17,854 | 35,977 |
| .0067 | .17 | 282 | 314 | 15,786 | 31,809 |
| .007 | .1788 | 308 | 343 | 14,481 | 29,140 |
| .0071 | .18 | 317 | 352 | 14,057 | 28,325 |
| .0075 | .19 | 354 | 393 | 12,598 | 25,385 |
| .0079 | .20 | 393 | 436 | 11,354 | 22,879 |
| .008 | .2032 | 403 | 448 | 11,072 | 22,310 |
| .0083 | .21 | 434 | 482 | 10,286 | 20,727 |
| .0087 | .22 | 476 | 529 | 9,362 | 18,865 |
| .009 | .2286 | 510 | 567 | 8,748 | 17,628 |
| .0091 | .23 | 521 | 579 | 8,557 | 17,243 |
| .0094 | .24 | 558 | 618 | 8,020 | 16,160 |
| .0098 | .25 | 605 | 672 | 7,378 | 14,867 |
| .010 | .2540 | 630 | 700 | 7,086 | 14,278 |
| .0102 | .26 | 655 | 726 | 6,811 | 13,724 |
| .0106 | .27 | 707 | 786 | 6,306 | 12,708 |
| .011 | .28 | 765 | 850 | 5,832 | 11,751 |
| .0114 | .29 | 818 | 909 | 5,452 | 10,987 |
| .0118 | .30 | 877 | 974 | 5,089 | 10,254 |
| .012 | .3048 | 907 | 1,008 | 4,921 | 9,915 |
| .0122 | .31 | 937 | 1,041 | 4,761 | 9,593 |
| .0126 | .32 | 1,000 | 1,111 | 4,463 | 8,994 |
| .013 | .33 | 1,064 | 1,183 | 4,193 | 8,449 |
| .0134 | .34 | 1,131 | 1,256 | 3,946 | 7,952 |
| .0138 | .35 | 1,199 | 1,333 | 3,721 | 7,497 |
| .014 | .3556 | 1,234 | 1,372 | 3,615 | 7,285 |
| .0142 | .36 | 1,270 | 1,411 | 3,514 | 7,061 |
| .0146 | .37 | 1,342 | 1,492 | 3,324 | 6,698 |
| .015 | .38 | 1,417 | 1,575 | 3,149 | 6,346 |
| .0154 | .39 | 1,494 | 1,660 | 2,988 | 6,020 |
| .0157 | .40 | 1,552 | 1,725 | 2,874 | 5,792 |
| .016 | .4064 | 1,612 | 1,792 | 2,768 | 5,577 |
| .0161 | .41 | 1,633 | 1,814 | 2,733 | 5,508 |
| .0165 | .42 | 1,715 | 1,905 | 2,602 | 5,244 |
| .0169 | .43 | 1,799 | 1,999 | 2,481 | 4,999 |
| .017 | .4318 | 1,820 | 2,023 | 2,452 | 4,940 |
| .0173 | .44 | 1,885 | 2,095 | 2,367 | 4,770 |
| .0177 | .45 | 1,973 | 2,193 | 2,261 | 4,557 |
| .018 | .4572 | 2,041 | 2,268 | 2,187 | 4,407 |
| .0181 | .46 | 2,063 | 2,293 | 2,163 | 4,358 |
| .0185 | .47 | 2,156 | 2,395 | 2,070 | 4,172 |
| .0189 | .48 | 2,250 | 2,500 | 1,983 | 3,997 |
| .019 | .4826 | 2,274 | 2,527 | 1,962 | 3,955 |
| .0193 | .49 | 2,346 | 2,607 | 1,902 | 3,833 |
| .0197 | .50 | 2,444 | 2,716 | 1,825 | 3,676 |

# POLYESTER MONOFILAMENT SIZE EQUIVALENCY CHART

| Diameter Thousandths of an inch (mil.) | Diameter Millimeters | Denier | Decitex | Yards/lb. | Meters/Kg. |
|---|---|---|---|---|---|
| .020 | .5080 | 2,520 | 2,800 | 1,771 | 3,587 |
| .0201 | .51 | 2,545 | 2,828 | 1,754 | 3,534 |
| .0205 | .52 | 2,647 | 2,941 | 1,686 | 3,397 |
| .0209 | .53 | 2,751 | 3,057 | 1,622 | 3,268 |
| .021 | .5334 | 2,778 | 3,087 | 1,606 | 3,237 |
| .0213 | .54 | 2,858 | 3,175 | 1,581 | 3,147 |
| .0217 | .55 | 2,968 | 3,298 | 1,504 | 3,032 |
| .022 | .56 | 3,060 | 3,400 | 1,458 | 2,939 |
| .0224 | .57 | 3,161 | 3,512 | 1,412 | 2,845 |
| .0228 | .58 | 3,274 | 3,638 | 1,363 | 2,746 |
| .023 | .5842 | 3,332 | 3,703 | 1,339 | 2,699 |
| .0232 | .59 | 3,390 | 3,767 | 1,318 | 2,652 |
| .0238 | .60 | 3,508 | 3,898 | 1,272 | 2,563 |
| .024 | .61 | 3,628 | 4,032 | 1,230 | 2,478 |
| .0244 | .62 | 3,750 | 4,167 | 1,190 | 2,398 |
| .0248 | .63 | 3,874 | 4,305 | 1,152 | 2,321 |
| .025 | .6350 | 3,937 | 4,375 | 1,133 | 2,284 |
| .0252 | .64 | 4,000 | 4,445 | 1,115 | 2,248 |
| .0256 | .65 | 4,128 | 4,587 | 1,081 | 2,178 |
| .026 | .66 | 4,258 | 4,732 | 1,048 | 2,112 |
| .0264 | .67 | 4,390 | 4,878 | 1,018 | 2,048 |
| .0268 | .68 | 4,524 | 5,027 | 986 | 1,988 |
| .027 | .6858 | 4,592 | 5,103 | 972 | 1,958 |
| .0272 | .69 | 4,660 | 5,178 | 957 | 1,929 |
| .0276 | .70 | 4,799 | 5,332 | 930 | 1,874 |
| .028 | .71 | 4,939 | 5,488 | 903 | 1,821 |
| .0283 | .72 | 5,045 | 5,606 | 884 | 1,782 |
| .0287 | .73 | 5,189 | 5,765 | 860 | 1,733 |
| .029 | .7366 | 5,298 | 5,887 | 842 | 1,697 |
| .0291 | .74 | 5,334 | 5,927 | 836 | 1,688 |
| .0295 | .75 | 5,482 | 6,091 | 814 | 1,640 |
| .0299 | .76 | 5,632 | 6,258 | 792 | 1,597 |
| .030 | .7620 | 5,670 | 6,300 | 787 | 1,588 |
| .0303 | .77 | 5,783 | 6,428 | 771 | 1,555 |
| .0307 | .78 | 5,937 | 6,596 | 751 | 1,515 |
| .031 | .7874 | 6,054 | 6,727 | 737 | 1,485 |
| .0311 | .79 | 6,093 | 6,770 | 732 | 1,476 |
| .0315 | .80 | 6,251 | 6,945 | 714 | 1,439 |
| .0319 | .81 | 6,410 | 7,123 | 698 | 1,403 |
| .032 | .8128 | 6,451 | 7,168 | 692 | 1,394 |
| .0323 | .82 | 6,572 | 7,303 | 679 | 1,368 |
| .0326 | .83 | 6,695 | 7,439 | 668 | 1,343 |
| .033 | .84 | 6,860 | 7,623 | 650 | 1,311 |
| .0334 | .85 | 7,028 | 7,808 | 635 | 1,279 |
| .0338 | .86 | 7,197 | 7,997 | 620 | 1,249 |
| .034 | .8636 | 7,262 | 8,092 | 613 | 1,235 |
| .0342 | .87 | 7,388 | 8,187 | 605 | 1,220 |
| .0346 | .88 | 7,542 | 8,380 | 591 | 1,192 |
| .035 | .89 | 7,717 | 8,575 | 576 | 1,165 |
| .0354 | .90 | 7,894 | 8,772 | 565 | 1,139 |
| .0358 | .91 | 8,074 | 8,971 | 552 | 1,114 |
| .036 | .9144 | 8,164 | 9,072 | 546 | 1,101 |
| .0362 | .92 | 8,255 | 9,173 | 540 | 1,089 |
| .0366 | .93 | 8,439 | 9,376 | 529 | 1,065 |
| .037 | .94 | 8,624 | 9,583 | 517 | 1,043 |
| .0374 | .95 | 8,812 | 9,791 | 506 | 1,020 |
| .0377 | .96 | 8,954 | 9,949 | 498 | 1,004 |
| .038 | .9652 | 9,097 | 10,108 | 490 | 988 |
| .0381 | .97 | 9,145 | 10,161 | 488 | 983 |
| .0385 | .98 | 9,338 | 10,375 | 478 | 963 |
| .0389 | .99 | 9,533 | 10,592 | 468 | 943 |
| .039 | .9906 | 9,582 | 10,648 | 465 | 938 |
| .0393 | 1.00 | 9,730 | 10,811 | 458 | 924 |
| .0397 | 1.01 | 9,929 | 11,032 | 449 | 905 |
| .040 | 1.0160 | 10,080 | 11,200 | 442 | 892 |

## NYLON MONOFILAMENT SIZE EQUIVALENCY CHART

| Diameter Thousandths of an Inch (mil.) | Diameter Millimeters | Denier | Dechex | Yards/lb. | Meters/Kg. |
|---|---|---|---|---|---|
| .004 | .1016 | 83 | 92 | 53,658 | 108,122 |
| .0043 | .11 | 96 | 106 | 46,436 | 93,589 |
| .0047 | .12 | 114 | 127 | 38,868 | 78,319 |
| .005 | .1270 | 130 | 144 | 34,341 | 69,198 |
| .0051 | .13 | 135 | 150 | 33,008 | 66,512 |
| .0055 | .14 | 157 | 174 | 28,381 | 57,188 |
| .0059 | .15 | 181 | 201 | 24,663 | 49,697 |
| .006 | .1524 | 187 | 208 | 23,848 | 48,054 |
| .0063 | .16 | 206 | 229 | 21,632 | 43,588 |
| .0067 | .17 | 233 | 259 | 19,126 | 38,538 |
| .007 | .1778 | 254 | 283 | 17,521 | 35,305 |
| .0071 | .18 | 262 | 291 | 17,031 | 34,317 |
| .0075 | .19 | 292 | 325 | 15,262 | 30,754 |
| .0079 | .20 | 324 | 360 | 13,756 | 27,719 |
| .008 | .2032 | 332 | 369 | 13,414 | 27,030 |
| .0083 | .21 | 358 | 398 | 12,482 | 25,112 |
| .0087 | .22 | 393 | 437 | 11,343 | 22,856 |
| .009 | .2286 | 421 | 466 | 10,599 | 21,357 |
| .0091 | .23 | 430 | 478 | 10,367 | 20,890 |
| .0094 | .24 | 459 | 510 | 9,716 | 19,576 |
| .0098 | .25 | 499 | 554 | 8,939 | 18,013 |
| .010 | .2540 | 520 | 577 | 8,585 | 17,298 |
| .0102 | .26 | 541 | 601 | 8,252 | 16,628 |
| .0106 | .27 | 584 | 649 | 7,641 | 15,398 |
| .011 | .28 | 629 | 699 | 7,095 | 14,297 |
| .0114 | .29 | 675 | 750 | 6,608 | 13,311 |
| .0118 | .30 | 724 | 804 | 6,165 | 12,424 |
| .012 | .3048 | 748 | 832 | 5,962 | 12,013 |
| .0122 | .31 | 773 | 659 | 5,768 | 11,623 |
| .0126 | .32 | 825 | 917 | 5,407 | 10,896 |
| .013 | .33 | 878 | 976 | 5,080 | 10,236 |
| .0134 | .34 | 933 | 1,037 | 4,781 | 9,634 |
| .0138 | .35 | 990 | 1,100 | 4,508 | 9,084 |
| .014 | .3556 | 1,019 | 1,132 | 4,380 | 8,826 |
| .0142 | .36 | 1,048 | 1,165 | 4,257 | 8,579 |
| .0146 | .37 | 1,108 | 1,231 | 4,027 | 8,115 |
| .015 | .38 | 1,170 | 1,300 | 3,816 | 7,688 |
| .0154 | .39 | 1,233 | 1,370 | 3,620 | 7,294 |
| .0157 | .40 | 1,281 | 1,424 | 3,483 | 7,018 |
| .016 | .4064 | 1,331 | 1,479 | 3,353 | 6,757 |
| .0161 | .41 | 1,347 | 1,497 | 3,312 | 6,673 |
| .0165 | .42 | 1,415 | 1,573 | 3,153 | 6,354 |
| .0169 | .43 | 1,485 | 1,650 | 3,005 | 6,057 |
| .017 | .4318 | 1,502 | 1,669 | 2,970 | 5,985 |
| .0173 | .44 | 1,556 | 1,729 | 2,868 | 5,780 |
| .0177 | .45 | 1,628 | 1,810 | 2,740 | 5,521 |
| .018 | .4572 | 1,684 | 1,872 | 2,649 | 5,339 |
| .0181 | .46 | 1,703 | 1,892 | 2,620 | 5,280 |
| .0185 | .47 | 1,778 | 1,977 | 2,508 | 5,054 |
| .0189 | .48 | 1,857 | 2,063 | 2,403 | 4,642 |
| .019 | .4826 | 1,877 | 2,065 | 2,378 | 4,792 |
| .0193 | .49 | 1,936 | 2,152 | 2,304 | 4,644 |
| .0197 | .50 | 2,018 | 2,242 | 2,212 | 4,457 |
| .020 | .5080 | 2,080 | 2,311 | 2,146 | 4,324 |
| .0201 | .51 | 2,100 | 2,334 | 2,125 | 4,281 |
| .0205 | .52 | 2,165 | 2,428 | 2,042 | 4,116 |
| .0209 | .53 | 2,271 | 2,523 | 1,965 | 3,960 |

## NYLON MONOFILAMENT SIZE EQUIVALENCY CHART

| Diameter Thousandths of an Inch (mil.) | Diameter Millimeters | Denier | Decitex | Yards/lb. | Meters/Kg. |
|---|---|---|---|---|---|
| .021 | .5334 | 2,293 | 2,548 | 1,946 | 3,922 |
| .0213 | .54 | 2,359 | 2,821 | 1,892 | 3,813 |
| .0217 | .55 | 2,448 | 2,720 | 1,823 | 3,673 |
| .022 | .56 | 2,516 | 2,796 | 1,773 | 3,574 |
| .0224 | .57 | 2,609 | 2,899 | 1,711 | 3,447 |
| .0228 | .56 | 2,703 | 3,003 | 1,651 | 3,327 |
| .023 | .5842 | 2,750 | 3,056 | 1,622 | 3,270 |
| .0232 | .59 | 2,788 | 3,109 | 1,595 | 3,214 |
| .0236 | .60 | 2,896 | 3,217 | 1,541 | 3,106 |
| .024 | .61 | 2,995 | 3,328 | 1,490 | 3,003 |
| .0244 | .62 | 3,095 | 3,439 | 1,442 | 2,905 |
| .0248 | .63 | 3,198 | 3,553 | 1,395 | 2,812 |
| .025 | .6350 | 3,250 | 3,611 | 1,373 | 2,787 |
| .0252 | .64 | 3,302 | 3,669 | 1,351 | 2,724 |
| .0258 | .65 | 3,407 | 3,785 | 1,310 | 2,639 |
| .026 | .66 | 3,515 | 3,905 | 1,270 | 2,559 |
| .0264 | .67 | 3,624 | 4,026 | 1,231 | 2,482 |
| .0268 | .68 | 3,734 | 4,149 | 1,195 | 2,408 |
| .027 | .6858 | 3,790 | 4,212 | 1,177 | 2,373 |
| .0272 | .69 | 3,847 | 4,274 | 1,160 | 2,338 |
| .0276 | .70 | 3,961 | 4,401 | 1,127 | 2,270 |
| .028 | .71 | 4,076 | 4,529 | 1,095 | 2,206 |
| .0283 | .72 | 4,184 | 4,627 | 1,071 | 2,106 |
| .0287 | .73 | 4,283 | 4,759 | 1,042 | 2,100 |
| .029 | .7366 | 4,373 | 4,859 | 1,020 | 2,057 |
| .0291 | .74 | 4,403 | 4,892 | 1,013 | 2,042 |
| .0295 | .75 | 4,525 | 5,028 | 988 | 1,987 |
| .0299 | .76 | 4,648 | 5,165 | 960 | 1,935 |
| .030 | .7620 | 4,680 | 5,200 | 953 | 1,922 |
| .0303 | .77 | 4,774 | 5,304 | 935 | 1,884 |
| .0307 | .78 | 4,900 | 5,445 | 910 | 1,835 |
| .031 | .7874 | 4,997 | 5,552 | 893 | 1,800 |
| .0311 | .79 | 5 029 | 5,588 | 887 | 1,788 |
| .0315 | .80 | 5,159 | 5,733 | 865 | 1,743 |
| .0319 | .81 | 5,291 | 5,879 | 843 | 1,700 |
| .032 | .8128 | 5,324 | 5,916 | 838 | 1,689 |
| .0323 | .82 | 5,425 | 6,027 | 822 | 1,658 |
| .0326 | .83 | 5,526 | 6,140 | 807 | 1,627 |
| .033 | .84 | 5,662 | 6,292 | 788 | 1,588 |
| .0334 | .85 | 5,800 | 6,445 | 769 | 1,550 |
| .0338 | .86 | 5,940 | 6,600 | 751 | 1,514 |
| .034 | .8636 | 6,011 | 6,679 | 742 | 1,498 |
| .0342 | .87 | 6,082 | 6,757 | 734 | 1,479 |
| .0346 | .88 | 6,225 | 6,916 | 717 | 1,445 |
| .035 | .89 | 6,370 | 7,077 | 700 | 1,412 |
| .0354 | .90 | 6,516 | 7,240 | 685 | 1,380 |
| .0358 | .91 | 6,664 | 7,405 | 669 | 1,349 |
| .036 | .9144 | 6,739 | 7,488 | 662 | 1,334 |
| .0362 | .92 | 6,814 | 7,571 | 655 | 1,320 |
| .0366 | .93 | 6,965 | 7,739 | 640 | 1,291 |
| .037 | .94 | 7,118 | 7,909 | 627 | 1,263 |
| .0374 | .95 | 7,273 | 8,081 | 613 | 1,236 |
| .0377 | .96 | 7,390 | 8,211 | 604 | 1,217 |
| .038 | .9652 | 7,508 | 8,343 | 594 | 1,198 |
| .0381 | .97 | 7,548 | 8,387 | 591 | 1,191 |
| .0385 | .98 | 7,707 | 8,564 | 579 | 1,167 |
| .0389 | .99 | 7,888 | 8,742 | 567 | 1,143 |
| .039 | .9906 | 7,909 | 8,788 | 564 | 1,137 |
| .0393 | 1.00 | 8,031 | 8,923 | 555 | 1,120 |
| .0397 | 1.01 | 8,195 | 9,106 | 544 | 1,097 |
| .040 | 1.016 | 8,320 | 9,244 | 536 | 1,081 |
| .045 | 1.143 | 10,530 | 11,700 | 423 | 854 |
| .050 | 1.270 | 13,000 | 14,444 | 343 | 691 |
| .055 | 1.397 | 15,730 | 17,477 | 283 | 571 |
| .060 | 1.524 | 18,720 | 20,800 | 238 | 480 |
| .065 | 1.651 | 21,970 | 24,411 | 203 | 409 |
| .070 | 1.778 | 25,480 | 28,311 | 175 | 353 |
| .075 | 1.905 | 29,250 | 32,500 | 152 | 307 |
| .080 | 2.032 | 33,280 | 36,977 | 134 | 270 |

# EXHIBIT III

REICOFIL
Reifenhäuser Gruppe





# Spunbonding lines

The spunbonding process is the most economic way of making nonwoven materials from a polymer in one step. Endless filaments in combination with a uniform discharge guarantee low grammage whilst retaining strength.

> Process description
> Type overview

Customer-Login >>>

Your contact
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+49 (0)700 REICOFIL
info@reicofil.com
> Send message

**Module**

A typical spunbonding fabric line - A module-by-module explanation.
> Interactive line demo

**Infomaterial to download**

REICOFIL - Spunbond and Composite Systems 04/2007, pdf, 2402 KByte

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Click here to download this software.

REICOFIL
Reifenhäuser Gruppe



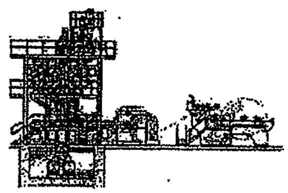


# Spunbonding lines: Type overview

We apart three different types of spunbonding lines: one, two and three beam systems, differing in working speed and total throughput.

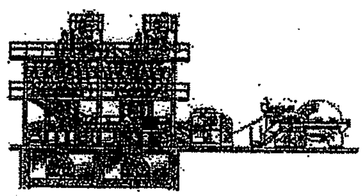
**Single beam spunbond line**

For production speeds up to 250 m/min



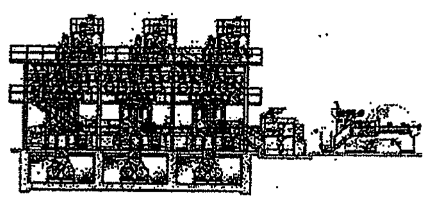
**Double beam spunbond line**

For production speeds up to 450 m/min



**Three beam spunbond line**

For production speeds up to 800 m/min





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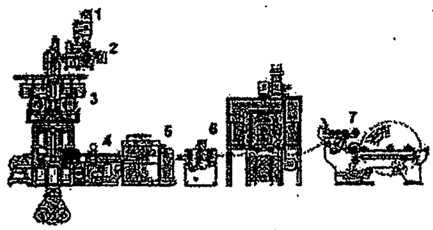
# Spunbonding lines: Modules




1 Dosing unit
2 Melt preparation
3 Filament production
4 Collection and conveyor unit
5 Nonwoven bonding
6 Nonwoven equipment
7 Winder

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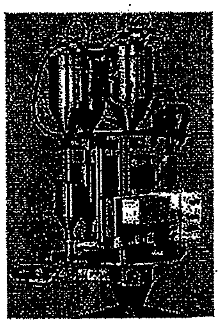
**1 Dosing unit**

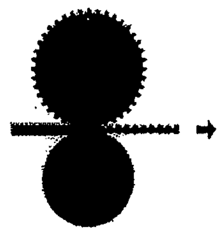


**2 Melt preparation**

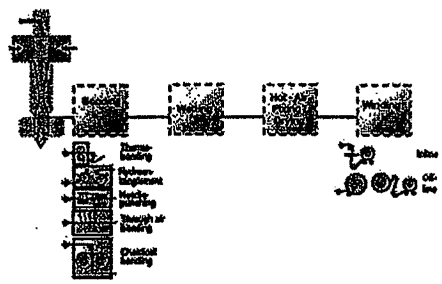
**3 Filament production**

**4 Collection and conveyor unit**

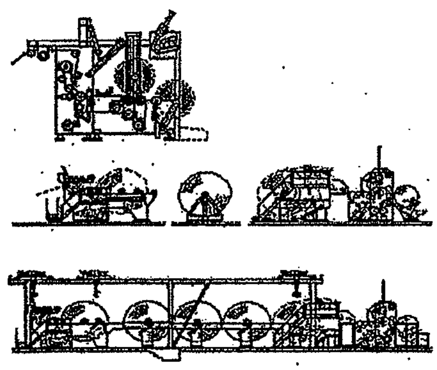
**5 Nonwoven bonding**



**6 Nonwoven equipment**



**7 Winder**



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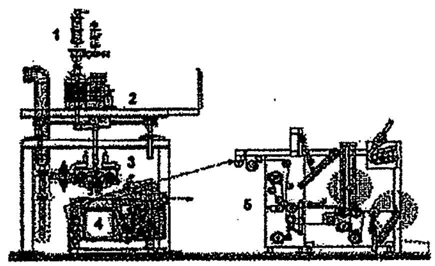
# MeltBlown lines: Modules



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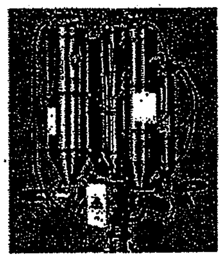
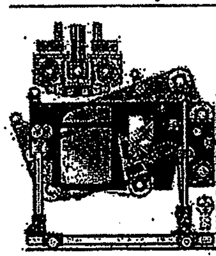
**1 Dosing unit**



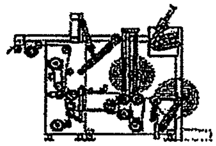
**2 Melt preparation**

**3 Filament production**

**4 Collection and conveyor unit**



**5 Winder**



## APPENDIX III

## RELATED PROCEEDINGS

None